



## Challenge or Opportunity: Exploring Emergence and Historical Development of Hyper textual Representations

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### Abstract:-

*With the invention of digital technologies, the activity of reading has become highly dependent on the display of language in new contexts and new forms, and thus, new reading environments play their role in comprehension while enhancing the experience of the reader. Since new devices/machines are invented keeping in view their utility/productivity and the preferences of the users, so the application of digital hypertext using electronic medium might attribute quite new dimensions to studying language comprehensibility because of the change in language (re)presentation. Therefore, whether with the advent of digital texts the nature of comprehension in new language forms, gets modified or not is a researchable question to be explored and studied. The emergence of hypertext representation started an unending debate about the nature of hypertext per se and the way it enriches the interactive process of meaning making, and the phenomenon of comprehension of texts and their production. It is important to consider the nature of hypertext representation because it is concerned with its exclusive comprehension patterns unlike traditional book reading. The present review article is basically a critical study of literature regarding the emergence and historical development of hypertext.*

**Keywords:** Hypertext; multimodality; multisequentiality; traditional text

### Introduction:-

Talking about the term hypertext, Grafton and Permaloff (1991) note that it is borrowed from science fiction, and “It refers to heavily cross indexed written material organized so that the reader can move easily from one category or subcategory to another” (p. 1). However, it was Vannevar Bush (1945) who first gave the idea of preparing such a mechanism to search the required information that would facilitate the work of the researchers. It was meant to enhance the working memory of the users. Considering this, it was aptly named as Memex (memory extender) (p. 6). It was Ted Nelson who first used the term hypertext interchangeably with hypermedia (1965) because there was no clear boundary at the time of its inception. He thought to present the material in hypertext pages in such a “complex way that it could not conveniently be presented or represented on paper,” and these pages clearly manifest Nelson’s thought (Wardrip, 2004, p.

127). Another hypertext theorist, Feustle (1997) notes that Nelson used the term in the fashion of Mathematics and Sciences, and it was in the sense of “extension and generality” that he wished to use the term ‘hyper’ rather than in the meaning of “excess,” for which the term is generally known for today. Thus, digital hypertext is an ‘extension’ in the existing textual practices based on traditional print medium.

Referring to Klein, Feustle (1997) writes that the term *text* in itself contains the meaning what hypertext is meant to convey. It is derived from the word *texere* that means “to weave, plait, fit together.” This is what hypertext design reflects, and “Today’s computerized hypertext is exactly this: an electronically woven context” (p. 216). Thus, the digital interface provides space to the text and the context with embedded links.

In Feustle's opinion, Nelson had some idea of hypertext a few years before he formally presented it as a new concept for producing, recording and reading texts. However, he was quite hopeful that this emerging representation of text would replace the old paper-based text. Though the use of digital hypertexts is increasing; however, print medium still retains its place and has not lost its position for the readers as an important source of information and knowledge.

### Definition and various features:-

Hypertext, being a new phenomenon, posits a definition that encompasses its features and the way this representation manifests structural differences with classical printed text. Hypertext is a digital (re)presentation of (multimodal) language displayed through electronic screen. It is an emergent representational form, alternate to printed paper text, that constitutes a web of interrelated information inviting its readers to take the course through its multisequential discourse. Hypertext is mainly an electronic text, and hyperlinks connect it with other content nodes in a multilinear fashion (Eisenlauer & Hoffmann, 2008). Hypertext lacks a standard and universal definition which is why it has caused misunderstanding about the comprehension of its nature and working. In Conklin's opinion (1987), it is because of the term and the constituent features that have been discussed quite loosely. However, the idea of hypertext for Nelson was "a series of text chunks connected by links which offer the reader different pathways," and in his later writings as *Literary Machines* (Edition 87.1), he wrote from this perspective (p. 18). This digital representation, which is electronically composed in comparison with the classical printed linear text, varies distinctively in its structure and design. Rimrott (2001) observes that, "Hypertexts are electronically published texts that have a non-linear, network-like structure presenting the textual information in separate, autonomous modules called nodes" (p. 2).

These defining characteristics guide this representational form to incorporate only those

interactional features that are specific and peculiar to this digital medium. This multimodal and multilinear hypertext composed in digital environment has "neither a centre nor an end" (Snyder, 1996). George Landow (2000) highlights these characteristics when he writes:

[N]ew information technology as text composed of lexias (blocks of words, moving or static images, or sounds) linked electronically by multiple paths, chains, or trails in an open-ended web. Since readers can take different paths through such bodies of information, hypertext is therefore properly described as multisequential or multilinear rather than as nonlinear writing. (p. 154)

Thus, the presentation of various text chunks on one interface is the hallmark of digital hypertext. This interweaving of textual contents gives it a shape of "writing a narrative story" (Hunter, 1999, p. 108). There are ontological questions that have come along with the evolving discussions. These are about its definition and the representational form (Joyce, 1987). Taking another step toward the exploration of the phenomenon, Parr (2001) very aptly hits the core question about the nature of the phenomenon. He disagrees with the idea of defining literary hypertext since there exists no unanimity among the theorists defining the term hypertext because it is "elusive" and "actively rejects the notion of framing" (p. 229).

Defining the characteristics of digital environments, Kirschenbaum (2009), in a broader perspective, observes that they are "interactive, manipulable, extensible," and he further adds that these are also the "sites of exploration, simulation, (and) play." So, for theorists, it is a dynamic text that defies any definition and with the changing context and content, it changes its form (cf. Moulthrop, 1989, p. 7). Dugan (1999) explaining the problem regarding this definitional "quandary" writes: "Whether this is due to the expanding popularity of the concepts or the



technology associated with them, the fact remains that a clear definition for the term hypertext is not easy to establish” (p. 98).

This is why Parr asks as to what kind of reading and writing can be labeled as hypertextual (p. 231). However, in his opinion hypertext writings are in contrast with what is not ‘on screen’ (p. 230), and for Landow (1997), it is a “text composed of blocks of words (or images) linked electronically by multiple paths, chains, or trails in an open-ended, perpetually unfinished textuality” (p. 3).

### **Hypertext as a traditional phenomenon:-**

Hypertextual writings, though, are quite new in their disposition and manifestation; nevertheless, it was Nelson (1981) himself who noted the fundamentally traditional nature of hypertextual writings. This might be the reason that some hypertext theorists consider the table of contents, chapter division, annotations and illustrations in the classical printed textual editions as the ancestors of the hypertext transpositions (for example, Mazzali & Schulz, 2004).

Looking at digital hypertext from a traditional perspective, its characteristic display seems to be historically situated within the oral discourse of humans which is primarily older than that of written form of communication. Therefore, Hoffman (2010) considers oral discussion multilinear and closer to hypertextual writings. He elucidates:

Oral discourse is temporally linear but conceptually multi-linear because of its interactive potential which allows interlocutors to momentarily put their discursive orientation at disposition. In face-to-face conversations, topics can be skipped, shifted, enhanced or stopped by various interlocutors. In contrast, most written discourse is organized temporally and conceptually in a linear fashion; here the same

dynamic imposition on the organization of discourse is largely unattainable. (p. 56)

Thus, the nature of an interactive digital hypertext, also, privileges the reader, and allows him/her the authority that the topics under study can be “skipped, shifted, enhanced or stopped.” This is because of the intrinsic characteristics of this text that gives space for different forms of (re)presentation therefore, bringing it closer to oral discourse than that of traditional monomodal linear text.

### **Kinds of digital hypertext:-**

These computer mediated digital texts have been invariably labeled diversely. Hypertext as a “generic term” is defined as “consist[ing] of individual blocks of text or nodes of information and the electronic links that join them, which offer the reader a variety of reading and viewing paths” (Roche, 2004, p. 175).

Theorists have used variety of terms interchangeably to denote hypertext. An analysis of the terms shows that, at conceptual level, there are not major differences among the terms save their names. However, Hoffmann (2010), in this respect makes a distinction that reflects a structural progression. He distinguishes three types of hypertext representation, and notes that, “the tripartite concept of e-texts, hyperdocuments and hyperwebs provides a common ground for the analysis of different types of hypertext which are opposed in regard to features like link quantity, theme or function” (pp. 53-54).

A native hypertext, unlike hypertextual transpositions (which are primarily written for print medium and afterward converted to hyperlinked digital form) is exclusively designed and written for interaction/reading on digital screen. However, Roche (2004) calls such textual representations as *sifted texts* rather than hypertexts that have other supporting materials along with the verbal text (p. 197), and he considers image, audio and visual as supporting materials.



It is Mazzali & Schulz (2004) who explain hypertextual transpositions as “a particular kind of hypermedia for literature and literary studies” (p. 1). They further explain hypertextual transpositions as “hypermedial applications,” and these applications change the outlook of the textual form and provide reading options to the reader keeping in view her/his reading goals and preferred learning style.

Talking about hypermedia representations, Grafton and Permaloff (1991) argue that it requires the addition of pictures and sound text along with the hyperlinked verbal text. But then Dugan (1999) points out that, for Landow, there is no distinction between the term ‘digital hypertext’ and ‘hypermedia’ because traditional texts also make use of supplementary material (p. 97). Some other theorists as Peterson (2006) and Portela (2007) also argue that digital hypertext is actually an ergodic representation because it is an incomplete text unless the reader is involved for the meaning making purposes. However, digital hypertext is an umbrella term that covers all such textual constructs related to computer mediated texts. Hunter (1999) examines this particular phenomenon, and notes:

Hypermedia texts can make it possible for us not only to bring together other media but also to make another medium: hence the confusion between hypertext (assembled printed texts), hypermedia (assembled texts from different media) and hypermedia texts (whole texts made up of assembled texts from one or more different media), although most commentators now use the word ‘hypertext’ to refer generically to all three. (p. 109)

Hypertext representations are studied and discussed from another dimension, that is of *constructive hypertext*. Giving control to the reader in constructive hypertext, a reader takes the role of semi-author, and it is “so open as to allow ‘new’

readers to directly delete parts of the ‘original’ text” (Parr, 2001, p. 240). Thus, the readers enjoy the authority of the writer as well, and construct an editable hypertext because of the space provided by the virtual textual representations.

### **Role of technology:-**

Technological advancement can be accounted for the new textual possibilities that emerged in the form of digital hypertext. This relationship of text and technology creates new forms and contexts, and thus, produces new spaces for meaning making barely experienced previously. In this respect, Eisenlauer & Hoffmann (2008) write that, “there is an intrinsic relation between the texts we compose and the technologies we apply for this purpose, though this relation must not be deterministic” (p. 19).

The availability of written material on the World Wide Web and Compact Disks (CDs) not only has given a successful impression to facilitating the readers throughout the globe, but redefined/modified the concept attached with the process of reading and meaning making in the English language, as well. This is because, according to Kerckhove (2002), technology affects mind as it supports and manage language representation.

However, it is mandatory to understand the impressions of technology so that we may appreciate what and how the interrelationship evolves, and regulates those processes that shape up an effective use of technology in meaning making. This would give us an insight about which McEneaney (2003) warrants in his article:

Although effective application of technology requires technically sound foundations, unless we can relate these technologies to the ways human readers and writers think about their objectives, our theories of hypertext are almost certain to miss their mark. (p. 11)





So, there is great need to gain knowledge about the implications of technological applications. Protopsaltis and Bouki (2005) citing Leu et al (2004) write that with the increasing use of technology for communicative purposes, linguistic activities would define the use of language with reference to communicative purposes (p. 159). These communication technologies have future implications and would also facilitate the instructors along with the readers (Frohlich, 1998; Rich, 2008). Apparently, it seems that these technologies that manage the textual (re)presentation might not replace the book once for all. Paulson (1989) very aptly remarks:

Everyone by now realize that electronic storage and retrieval systems can supplant the printed page as the medium or element of written language. Computers are fast replacing pen and ink and could literally replace the book, though that will not happen soon and may not happen at all. (p. 293)

It is not that all the theorists welcome it that positively, rather, some of them are apprehensive of the way emerging technological representations and digital museum would change what is so precious to preserve for them. Paulson (1989) quotes Porush (1987) who cautions in this regard that:

cybernetics threatens to deprive us of our sense of ourselves and authors of their authority. It would replace the mind with a brain, meaning with information, reading with information processing the text with technique, uncertainty with closure, love with feedback loops. (p. 300)

The binary oppositions, Porush has referred to, are a reflection of the apprehension that critics have for the mechanization of learning and meaning making processes. He takes it as an artificial transformation that may have negative repercussions

on human understanding. However, there are those theorists as well who perceive this process quite differently.

It was McLuhan (1964) who perceived that technological media are extensions of human beings and the way these humans interact with the world (Hurrell et al., 2001, p. 182). Observing the technological advancement and the invention of assisting machines, another theorist Corea (2000) remarks that the “technologies like computer systems belong to the realm of expressive tools of human nature” (p. 9). And these expressive tools are a part of day to day academic activities for the presentation and processing of textual representations. Thus, these theorists try to establish that technological representations have strong impressions on the ways we process and understand digital language in electronic texts.

Technology used in the production and processing of language offers new possibilities of meaning making. It is, nevertheless, the reader who needs to avail that opportunity. Lanham (1989) is quite optimistic and hopes that we should not think of technology as an accelerating force “driving us where we don't want to go than as an opportunity to go where we have never been, and do things no one has done before” (p. 288). Thus, Lanham considers technological advancement an opportunity rather than a challenge that would unfold new horizons for meaning making processes and an enriched understanding of life. Furthermore, the innovations in this field would have positive implications on the meaning making patterns of the readers. Dillon (1992) responding to the technological limitations, notes, “technology is developing and electronic text of the future is unlikely to be handicapped by limitations in screen image and portability that currently seem major obstacles” (p. 2).

To conclude, the researchers are ambivalent; nevertheless, they are positive about the future of the digital hypertext and makes light of the charges levelled against its proposed complex

(re)presentational patterns. This new emerging phenomenon seems to change the nature and future of academia and the way readers/learners interact with language for comprehension.

### References:-

[1] Bush, V. (1945). As We May Think. *Atlantic Monthly*. Retrieved on 12th December 2008 from

<http://www.theatlantic.com/doc/194507/bush>.

[2] Conklin, J. (1987) Hypertext: An introduction and survey. *IEEE Computer*. 20, 9, (pp. 17–40).

[3] Dugan, J. (1999) 'Hypertext'. *Computers in the Schools*, 15:1, (pp. 93 — 100).

[4] Corea, S. (2000). Cultivating Technological Innovation for Development. *Electronic Journal on Information Systems in Developing Countries*, 2(2), (pp. 1-15).

[5] Dillon, A. (1992). Reading from paper versus screens: a critical review of the empirical literature. *Ergonomics*, 35(10), (pp. 1297-1326).

[6] Eisenlauer, V. & Hoffmann, C. (2008). The metapragmatics of remediated text design. *Information Design Journal*, Vol. 16, No. 1. (pp. 1-18).

[7] Feustle, A., Jr. (1997). Literature in Context: Hypertext and Teaching. *Hispania* 80, (pp. 216-26).

[8] Frohlich, R. (1998) New Media Communication Technologies Facilitating Asynchronous Delivery of Distance Learning For Differing Learning Styles: Affective Pedagogical Techniques for Multimedia Into The New Millennium. (pp.279-287). Retrieved from <http://www.ascilite.org.au/conferences/wollongong98/.../frohlich0050.pdf>

[9] Grafton, C. & Permaloff, A. (1991). Hypertext and Hypermedia. *Political Science and Politics*, Vol. 24, No. 4, (pp. 724-730).

[10] Hoffmann, C. (2010). From Monologue to Dialogue? Cohesive Interaction in Personal Weblogs. (Doctoral dissertation). Retrieved from <http://opus.bibliothek.uni-augsburg.de/opus4/frontdoor/index/index/docId/1400>.

[11] Hunter, L. (1999) *Situated Textualities : Science, Computing and the Arts*. London, GBR: Routledge.

[12] Hurrell, G., Sommer, P., & Sarev, J. (2001). *Cyber-English and the New Classroom Aliens?* In Durrant, Cal (Ed.). *P(ICT)ures of English*. Kent Town, SA, AUS: Wakefield Press. (pp. 175-190).

[13] Kerckhove, D. (2002). Text, Context and Hypertext, three conditions of language, three conditions of mind. In M. Herczeg, W. Prinz, H. Oberquelle (Hrsg.): *Mensch & Computer 2002: Vom interaktiven Werkzeug zur kooperativen Arbeit* s- und Lernwelten. Stuttgart: B. G. Teubner, (pp. 15-19).

[14] Kirschenbaum, M. (2009). Hello Worlds: Why humanities students should learn to program. *The Chronicle Review* online. Retrieved from

[http://chronicle.com/article/Hello-](http://chronicle.com/article/Hello-Worlds/5476)

[Worlds/5476](http://chronicle.com/article/Hello-Worlds/5476). Joyce, M. (1987/ 1991). *Afternoon, a story*. Eastgate Systems. Retrieved from <http://www.eastgate.com>.

[15] Landow, G. P. (1997). *Hypertext 2.0: The Convergence of Contemporary Critical Theory and Technology*. Baltimore: Johns Hopkins University Press.

[16] Landow, G. P. (2000). Hypertext as Collage-Writing. In Lunenfeld, Peter (Editor), *Digital Dialectic : New Essays on New Media*.



Cambridge, MA, USA: MIT Press, (pp. 150-171).

[17] Leu, D.J. & Reinking, D. (2005-2008). Teaching Internet Comprehension to Adolescents (TICA). website created as part of a collaborative project funded by the Institute of Education Sciences. Retrieved from <http://www.newliteracies.uconn.edu/iesproject/>.

[18] Mazzali-Lurati, S. & Schulz, P. (2004). A semiotic approach to new media for literary studies. New conditions for the act of reading? In: S. Arroyo & C. Lacalle (eds): *Semiotica e informatica: unanuevaalianza*, Razon y Palabra, 38.

[19] McEneaney, J. E. (2003). A transactional theory of hypertext structure. In C. M. Fairbanks, J. Worthy, B. Malock, J. V. Hoffman, & D. L. Schallert (Eds.), *Yearbook of the National Reading Conference*. Oak Creek, WI: National Reading Conference, (pp. 1- 21).

[20] McLuhan, M. (1964). *Understanding Media: The Extensions of Man*. London: Routledge and Kegan Paul.

[21] Moulthrop, S. (1989) *In the Zones: Hypertext and the Politics of Interpretation*. In Cynthia Selfe and Gail Hawisher's collection, *Evolving Perspectives on Computers and Composition Studies in 1990*. Retrieved from <http://iat.ubalt.edu/moulthrop/essays/zones.html>.

[22] Nelson, T. (1965). A File Structure for the Complex, the Changing, and the Indeterminate. *Association for Computing Machinery: Proc. 20th National Conference 1965*, (pp. 84-100).

[23] Nelson, T. (1981). *Literary Machines*. Sausalito (CA): Mindful Press.

[24] Paulson, W. (1989). *Computers, Minds, and Texts: Preliminary Reflections*. New Literary

History, Vol. 20, No. 2, Technology, Models, and Literary Study, (pp. 291-303).

[25] Parr, G. (2001). If in a Literary Hypertext a Traveller ... Preparing for Travel. In Durrant, C. (Editor). *P(ICT)ures of English*. Kent Town, SA, AUS: Wakefield Press, (pp. 227-246).

[26] comprehension and assessment (pp. 13-69). Mahwah, NJ: Erlbaum.

[27] Paulson, W. (1989). *Computers, Minds, and Texts: Preliminary Reflections*. New Literary History, Vol. 20, No. 2, Technology, Models, and Literary Study, (pp. 291-303).

[28] Peterson, T. (2006). New Media Poetry and Poetics From Concrete to Codework: Praxis in Networked and Programmable Media. In *New Media Poetry and Poetics Special Issue, Leonardo Electronic Almanac 14*. 5-6 (2006). 20 March 2007. Retrieved from [http://lealmanac.org/journal/vol\\_14/lea\\_v14\\_n05-06/tpeterson.asp4](http://lealmanac.org/journal/vol_14/lea_v14_n05-06/tpeterson.asp4).

[29] Portela, M. (2007). *New Textualities*. *European Journal of English Studies*, 11:2, (pp. 121-132).

[30] Protosaltis, A. & Bouki, V. (2005). Towards a hypertext reading/ comprehension model, *Proceedings of the 23rd annual international conference on Design of communication: documenting & designing for pervasive information*, September 21-23, Coventry, United Kingdom. Pp. 159-166 [doi: 10.1145/1085313.1085349].

[31] Rich, M. (2008). *Literacy Debate: Online, R U Really Reading? The New York Times*. Retrieved from [http://www.nytimes.com/2008/07/27/books/27reading.html?Pagewanted=all&\\_moc.semityn.www](http://www.nytimes.com/2008/07/27/books/27reading.html?Pagewanted=all&_moc.semityn.www)



- [32] Rimrott, A. (2001). A comparison of linear text and hypertext: Based on Readers' Comprehension and Preferences. Paper for Hauptseminar, "Hypertextlinguistics".
- [33] Roche, M. W. (2004). Why Literature Matters in the 21st Century. New Haven, CT, USA: Yale University Press
- [34] Snyder, I. (1996). Hypertext: The electronic labyrinth. Victoria, Australia: Melbourne University Press.
- [35] Wardrip-Fruin, N. (2004) What hypertext is. Proceedings of the fifteenth ACM conference on Hypertext and hypermedia, August 09-13, 2004, Santa Cruz, CA, USA. DOI:10.1145/1012807.1012844.